Optimization 2007 vol.56 N3, pages 399-416

An extension of the Jacobi algorithm for multi-valued mixed complementarity problems

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Abstract

We consider a generalized mixed complementarity problem (MCP) with box constraints and multi-valued cost mapping. We introduce a concept of an upper Z-mapping, which generalizes the well-known concept of the single-valued Z-mapping and involves the diagonal multi-valued mappings, and suggest an extension of the Jacobi algorithm for the above problem containing a composition of such mappings. Being based on its convergence theorem, we establish several existence and uniqueness results. Some examples of the applications are also given.

http://dx.doi.org/10.1080/02331930600662856

Keywords

Existence of solutions, Jacobi algorithm, Mixed complementarity problem, Multi-valued mappings, Upper Z-mappings